

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

PUMP COMPANY

Zoeller Family of Water Solutions™

TECHNICAL DATA SHEET

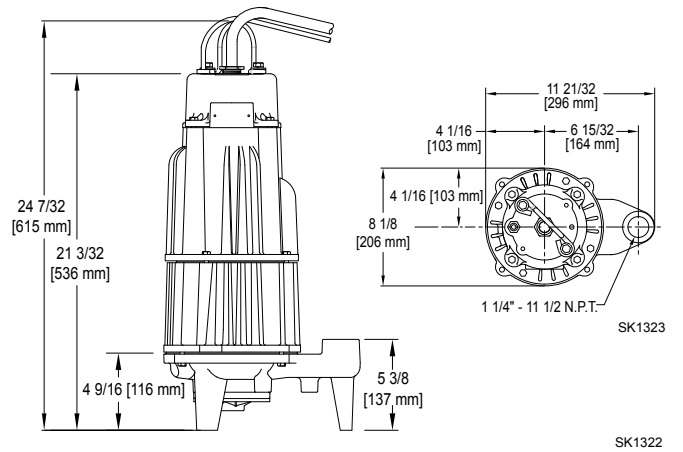
THE SHARK *Series* **Model 840/841/842**
Grinder Pumps

Pump Systems And Reversing Controls

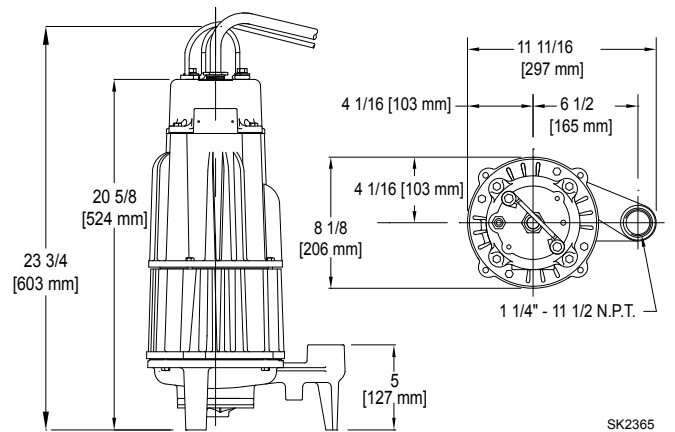
PRODUCT SPECIFICATIONS

MOTOR	Horse Power	2
	Voltage	200 - 575
	Phase	1 or 3 Ph
	Hertz	60 Hz
	RPM	3450
	Type	Capacitor start / capacitor run or 3 Ph
	Insulation	Class F
	Amps	4.5 - 20.0
PUMP	Operation	Nonautomatic
	Discharge Size	1-1/4" NPT vertical
	Cord Length	20' (6 m) standard
	Cord Type	SOW or SOOW, multi-wire neoprene
	Max. Head	125' (38.1 m)
	Max. Flow Rate	61 GPM (231 LPM)
	Max. Operating Temp.	130°F (54°C)
	Cooling	Oil filled
	Motor Protection	Auto reset thermal overload (1 Ph), thermal sensor (3 Ph)
	MATERIALS	Cap
Motor Housing		Cast iron
Adapter		Cast iron
Pump Housing		Cast iron
Upper Bearing		Ball bearing
Lower Bearing		Ball bearing
Mechanical Seals		Carbon/ceramic
Impeller Type		Non-clogging vortex
Impeller		Ductile iron (840) or bronze (841 & 842)
Hardware		Stainless steel
Motor Shaft		Stainless steel
Square Rings		Neoprene
Cutter	Hardened stainless steel, Rockwell C55-60	

Model 840



Models 841/842



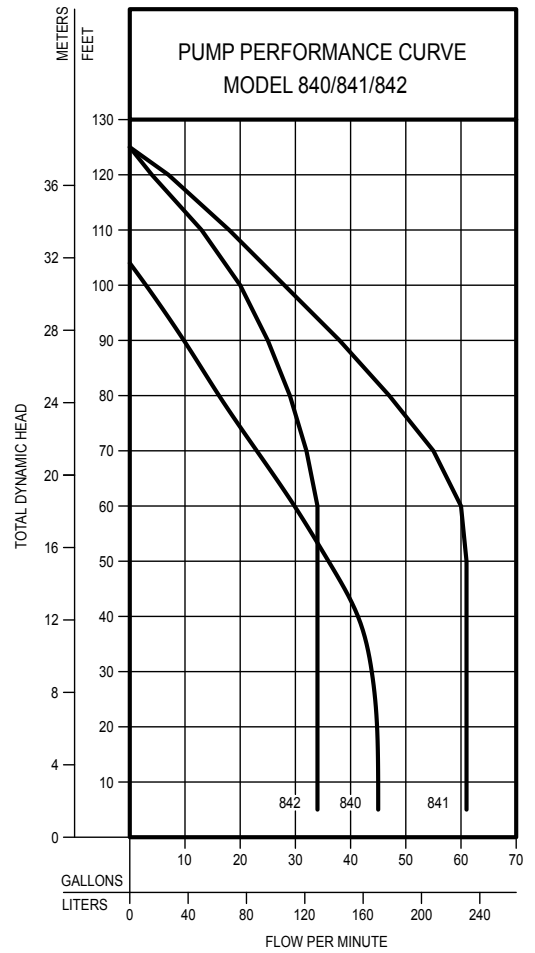
NOTE: See model comparison chart for specific details.



**TOTAL DYNAMIC HEAD/FLOW
PER MINUTE - SEWAGE**

MODEL		840 REVERSING		841 HIGH FLOW		842 HIGH HEAD	
Feet	Meters	Gal.	Liters	Gal.	Liters	Gal.	Liters
5	1.5	45	170	61	231	34	129
10	3.0	45	170	61	231	34	129
20	6.1	45	170	61	231	34	129
30	9.1	44	167	61	231	34	129
40	12.2	42	159	61	231	34	129
50	15.2	36	136	61	231	34	129
60	18.3	30	114	60	227	34	129
70	21.3	23	87	55	208	32	121
80	24.4	16	61	47	178	29	110
90	27.4	10	38	38	144	25	95
100	30.5	3	11	28	106	20	76
110	33.5	--	--	18	68	13	49
120	36.6	--	--	7	26	4	15
Shut-off Head:		104 ft (31.7 m)		125 ft (38.1 m)		125 ft (38.1 m)	

016532_nonXproof



Model	MODEL COMPARISON				
	Volts	Ph	Amps	Lbs	Kg
E840	230	1	17.2	137	62
I840	200	1	20.0	137	62
F840	230	3	10.8	132	60
J840	200	3	12.3	132	60
G840	460	3	5.5	132	60
BA840	575	3	4.5	132	60
I841	200	1	20.0	135	61
E841	230	1	17.2	135	61
J841	200	3	12.3	135	61
F841	230	3	10.8	135	61
G841	460	3	5.5	135	61
BA841	575	3	4.5	135	61
I842	200	1	20.0	135	61
E842	230	1	17.2	135	61
J842	200	3	12.3	135	61
F842	230	3	10.8	135	61
G842	460	3	5.5	135	61
BA842	575	3	4.5	135	61

NOTE: All models are double seal, nonautomatic, 2 HP, and 60 Hz.

- Reversing cutter action can be manual or automatic.
- Circuit in control panel required for automatic reversing action, thermal sensors and moisture probes.

Electrical Data and Control Panel Selections

Models	Part Number	Volts	Phase	HP	Amps	*Start Pak	**NEMA 4X Control Panels	
							Simplex	Duplex
I841	841-0005	200	1	2	20.0	10-0380	10-1650	10-1652
E841	841-0004	230	1	2	17.2	10-0380	10-1650	10-1652
J841	841-0006	200	3	2	12.3	Not Required	10-1097	10-1125
F841	841-0007	230	3	2	10.8	Not Required	10-1097	10-1125
G841	841-0008	460	3	2	5.5	Not Required	10-1094	10-1122
BA841	841-0009	575	3	2	4.5	Not Required	10-1146	10-1168
I842	841-0005	200	1	2	20.0	10-0380	10-1650	10-1652
E842	842-0004	230	1	2	17.2	10-0380	10-1650	10-1652
J842	842-0006	200	3	2	12.3	Not Required	10-1097	10-1125
F842	842-0007	230	3	2	10.8	Not Required	10-1097	10-1125
G842	842-0008	460	3	2	5.5	Not Required	10-1094	10-1122
BA842	842-0009	575	3	2	4.5	Not Required	10-1146	10-1168

* Capacitors and Start Relay are shipped loose for Field Installation.

** Control Panels include Seal Leak Indication, Visual and Audible High Water Alarm and Dry Contacts. Single Phase Control Panels include Capacitors and Start Relay.



All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

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840 GRINDER SYSTEM

A) GRINDER MODEL - 840 2 HP, 1¼" N.P.T. VERTICAL DISCHARGE - 20' (6 m) CORDS						
P/N	WGT.	MODEL	VOLTS	PH	AMP	
<input type="checkbox"/> 840-0004	137 lb (62.1 kg)	E840	230	1 ϕ	17.2	
<input type="checkbox"/> 840-0005	137 lb (62.1 kg)	I840	200	1 ϕ	20.0	
<input type="checkbox"/> 840-0006	132 lb (59.9 kg)	F840	230	3	10.8	
<input type="checkbox"/> 840-0007	132 lb (59.9 kg)	J840	200	3	12.3	
<input type="checkbox"/> 840-0008	132 lb (59.9 kg)	G840	460	3	5.5	
<input type="checkbox"/> 840-0009	132 lb (59.9 kg)	BA840	575	3	4.5	

▣ Single phase units require a set of capacitors and relay starting components.

STANDARD FEATURES:

- Reversible cutter action manual / auto**
- 1¼" NPT vertical discharge
- Carbon/ceramic tandem seals
- Thermal sensors** (overload on 1 Ph)
- Moisture probes**
- Ductile iron vortex impeller
- Stainless steel cutter and plate (R-C 55-60)
- Stainless steel shaft
- Stainless steel lifting bail
- Corrosion-resistant, powder coated epoxy paint
- 20' (6 m) power cord - 20' (6 m) sensor cord
- UL listed

OPTIONS:

- Extended cord lengths
- Bronze vortex impeller
- Anti-siphon device

**requires circuit in control panel to function

C*) VARIABLE LEVEL FLOAT SWITCHES	
INDOOR SYSTEM	
3 Switches and weights without brackets	
<input type="checkbox"/> P/N 10-0347	WGT. 9.5 lb (4.3 kg)
4 Switches and weights without brackets	
<input type="checkbox"/> P/N 10-0348	WGT. 13 lb (5.9 kg)
OUTDOOR SYSTEM	
3 Switches with weights and brackets	
<input type="checkbox"/> P/N 10-0329	WGT. 10 lb (4.5 kg)
4 Switches with weights and brackets	
<input type="checkbox"/> P/N 10-0330	WGT. 14 lb (6.4 kg)
Note: All variable level float switches in this section are mechanically activated and do not contain mercury.	

D) CHECK VALVES	
1¼" Cast iron NPT female	
<input type="checkbox"/> P/N 30-0163	WGT. 7.5 lb (3.4 kg)
1½" Cast iron NPT female	
<input type="checkbox"/> P/N 30-0164	WGT. 7.5 lb (3.4 kg)
2" Cast iron NPT female	
<input type="checkbox"/> P/N 30-0152	WGT. 10 lb (4.5 kg)

E) JUNCTION BOXES - TYPE 4X	
SIMPLEX	
5 holes with seals for (1) power cord, (1) sensor cord, (3) float switch cords.	
<input type="checkbox"/> P/N 10-0331	WGT. 2.5 lb (1.1 kg) 3-float system
DUPLEX	
8 holes with seals for (2) power cords, (2) sensor cords, (3 or 4) float switch cords.	
<input type="checkbox"/> P/N 10-0332	WGT. 2.5 lb (1.1 kg) 3-float system
<input type="checkbox"/> P/N 10-0421	WGT. 2.5 lb (1.1 kg) 4-float system

B) CONTROL PANELS					
SIMPLEX - NEMA 4 X			DUPLEX - NEMA 4X		
MODEL	P/N	WGT.	P/N	WGT.	
E or I840	<input type="checkbox"/> 10-0393	15 lb (6.8 kg)	<input type="checkbox"/> 10-0397	21 lb (9.5 kg)	
E or I840	<input type="checkbox"/> 10-0420*	17 lb (7.7 kg)	<input type="checkbox"/> 10-0512*	23 lb (10.4 kg)	
F or J840	<input type="checkbox"/> 10-0394	18 lb (8.2 kg)	<input type="checkbox"/> 10-0398	21 lb (9.5 kg)	
G840	<input type="checkbox"/> 10-0395	18 lb (8.2 kg)	<input type="checkbox"/> 10-0399	21 lb (9.5 kg)	
BA840	<input type="checkbox"/> 10-0396	18 lb (8.2 kg)	<input type="checkbox"/> 10-0400	21 lb (9.5 kg)	

*With Audible and Visible High Water Alarm

B) CONTROL PANEL

STANDARD FEATURES:

- NEMA 4X outdoor rating
- Starting, control, and alarm circuits
- Thermal cut-out circuit (3 Ph only)
- Circuit breaker and rated motor contactor (1 Ph)
- Capacitors and motor starting relay on single phase
- Motor protective switch (circuit breaker / adj overloads) and rated motor contactor (3 Ph)
- Alternating circuit (duplex)
- Automatic reversing circuit
- High water alarm light
- Internal seal leak light
- HOA switches and pilot light(s)
- Terminal strips
- Padlock hasp
- Capacitors/start relay (1 Ph)

OPTIONS:

- Audible high water alarm
- Flasher for high water alarm light
- Manual reset of high water alarm
- Intrinsically-safe relays
- Elapsed time meters
- Dry auxiliary contact
- For other options, consult factory

SIMPLEX REVERSING CONTROL BOXES*					
AUTOMATIC			MANUAL		
MODEL	P/N	WGT.	P/N	WGT.	
E840	<input type="checkbox"/> 10-0352	8 lb (3.6 kg)	<input type="checkbox"/> 10-0360	7 lb (3.2 kg)	
I840	<input type="checkbox"/> 10-0352	8 lb (3.6 kg)	<input type="checkbox"/> 10-0360	7 lb (3.2 kg)	
F840	<input type="checkbox"/> 10-0353	6 lb (2.7 kg)	<input type="checkbox"/> 10-0361	5 lb (2.3 kg)	
J840	<input type="checkbox"/> 10-0353	6 lb (2.7 kg)	<input type="checkbox"/> 10-0361	5 lb (2.3 kg)	
G840	<input type="checkbox"/> 10-0353	12 lb (5.4 kg)	<input type="checkbox"/>	Not available	

*These control boxes consist of the reversing mechanisms and capacitors (1Ph units) only. They will not control pumps. Refer to Section B for complete system controls. For duplex applications use two simplex reversing control boxes. (for pump prefix identification see News & Views 0052)

F) INDOOR BASIN, COVER, AND HARDWARE PREPACKAGED STANDARD EQUIPMENT			
• Fiberglass basin	• Cord seal(s)		
• Rust-resistant steel cover (epoxy coated only)	• 1-4" rubber inlet pipe seal (field-installed)		
• Inspection plate	• Pump support hardware		
• Individual pump covers	• 1¼" check valve(s)		
• 3" Adaptaflex vent seal	• Ball valve(s)		
• 1¼" Adaptaflex discharge pipe seal(s)			
SIMPLEX			
<input type="checkbox"/> 24" x 36" (61 x 91 cm)	P/N 32-0005	WGT.	107 lb (48.5 kg)
DUPLEX			
<input type="checkbox"/> 30" x 36" (76 x 91 cm)	P/N 32-0006	WGT.	154 lb (69.9 kg) 3-float system
<input type="checkbox"/> 30" x 36" (76 x 91 cm)	P/N 32-0007	WGT.	154 lb (69.9 kg) 4-float system

G) OUTDOOR BASIN, COVER, AND RAIL SYSTEM

ASSEMBLIES - STANDARD EQUIPMENT

- Fiberglass basin with anti-flotation ring
- 1 1/4" galvanized pump discharge piping to disconnect
- 1 1/4" PVC discharge pipe from disconnect
- 1 1/4" Adaptaflex discharge pipe seal
- Stainless steel square guide rail
- 1' (0.3 m) pull rod
- 8' (2.4 m) stainless steel lifting cable for basin depths to 84" (213 cm)
[12' (3.7 m) stainless steel lifting cable for basin depths of 96" (244 cm)]
- 1 1/4" PVC ball valve(s)
- 1 1/4" cast iron check valve(s)
- 1-4" rubber inlet pipe seal (field-installed)
- Fiberglass cover

SIMPLEX

<input type="checkbox"/> 24" x 48" (61 x 122 cm)	P/N 33-0022	WGT. 206 lb (93.4 kg)
<input type="checkbox"/> 24" x 60" (61 x 152 cm)	P/N 33-0023	WGT. 219 lb (99.3 kg)
<input type="checkbox"/> 24" x 72" (61 x 183 cm)	P/N 33-0024	WGT. 233 lb (105.7 kg)
<input type="checkbox"/> 24" x 84" (61 x 213 cm)	P/N 33-0057	WGT. 264 lb (119.7 kg)
<input type="checkbox"/> 24" x 96" (61 x 244 cm)	P/N 33-0025	WGT. 277 lb (125.6 kg)

DUPLEX

<input type="checkbox"/> 36" x 48" (91 x 122 cm)	P/N 33-0034	WGT. 367 lb (166.5 kg)
<input type="checkbox"/> 36" x 60" (91 x 152 cm)	P/N 33-0035	WGT. 389 lb (176.4 kg)
<input type="checkbox"/> 36" x 72" (91 x 183 cm)	P/N 33-0036	WGT. 472 lb (214.1 kg)
<input type="checkbox"/> 36" x 84" (91 x 213 cm)	P/N 33-0059	WGT. 499 lb (226.3 kg)
<input type="checkbox"/> 36" x 96" (91 x 244 cm)	P/N 33-0037	WGT. 525 lb (238.1 kg)

OPTIONS:

- All stainless steel fitted
- Larger diameter or deeper basins (allow for overhead clearance)

H) RAIL SYSTEMS - (FIELD-INSTALLED)

Z-Rail Disconnect System for 1 1/4" pump discharges (Rail System discharge is 2" NPT male thread)

Ductile Iron Constructions

- P/N 39-0134 WGT. 43 lb (19.5 kg)

With Stainless Steel Upper

Rail Support

- P/N 39-0135 WGT. 43 lb (19.5 kg)

Intermediate Stabilizer Bracket for every 12' (3.7 m) of depth.

Stainless Steel

- P/N 39-0139 WGT. 6 lb (2.7 kg)

Square Guide Rail System for systems less than 96" (244 cm) deep. BASIN DEPTH

- 48" (122 cm) P/N 39-0054 WGT. 90.5 lb (41.1 kg)
- 60" (152 cm) P/N 39-0055 WGT. 94.5 lb (42.9 kg)
- 72" (183 cm) P/N 39-0056 WGT. 98.5 lb (44.7 kg)

Fits both round and square basins. Includes square guide rail. Basins over 72" (183 cm) deep require one additional angle arm bracket.

- P/N 39-0070 WGT. 11 lb (5 kg)

I) BALL VALVE

1 1/4" IPS

- P/N 30-0165 WGT. 2 lb (0.9 kg)

1 1/2" IPS

- P/N 30-0166 WGT. 2 lb (0.9 kg)

2" IPS

- P/N 30-0167 WGT. 2.5 lb (1.1 kg)

J) PULL RODS FOR SQUARE GUIDE RAIL SYSTEMS ONLY (Field-Installed Systems)

- 1' (0.3 m) "L"
- P/N 39-0069 WGT. 0.5 lb (0.2 kg)
- 2.5' (0.8 m) "L"
- P/N 39-0006 WGT. 1 lb (0.5 kg)
- 3.5' (1.1 m) "L"
- P/N 39-0007 WGT. 1.5 lb (0.7 kg)
- 4.5' (1.4 m) "L"
- P/N 39-0008 WGT. 1.5 lb (0.7 kg)
- 5.5' (1.7 m) "L"
- P/N 39-0009 WGT. 2 lb (0.9 kg)

K) STAINLESS STEEL LIFTING CABLE (Field-Installed Systems)

- 8' (2.4 m)
 - P/N 39-0031 WGT. 1 lb (0.5 kg)
- 12' (3.7 m)
 - P/N 39-0032 WGT. 1 lb (0.5 kg)
- 16' (4.9 m)
 - P/N 39-0033 WGT. 1 lb (0.5 kg)
- 20' (6.1 m)
 - P/N 39-0034 WGT. 1 lb (0.5 kg)
- 24' (7.3 m)
 - P/N 39-0035 WGT. 1 lb (0.5 kg)

* Required for basin depths over 72" (183 cm) (Square Guide Rail) and over 12' (3.7 m) (E-Z Out Rail). Allow for overhead clearances.

** For Square Guide Rail only. Access doors available on field mount systems - consult factory. Special basin configurations - consult factory. Junction box mounting and assembly - consult factory.

FIELD-MOUNT SYSTEMS

SIMPLEX		DUPLEX	
REQ.	REQ.	REQ.	REQ.
1 Grinder	P/N ____ (A)	2 Grinders	P/N ____ (A)
1 Simplex control panel	P/N ____ (B)	1 Duplex control panel	P/N ____ (B)
1 Variable level fl. sw. assm.	P/N ____ (C)	1 Variable level fl. sw. assm.	P/N ____ (C)
1 Junction box	P/N ____ (E)	1 Junction box	P/N ____ (E)
1 Rail system	P/N ____ (H)	2 Rail systems	P/N ____ (H)
1 Angle arm/intermediate bracket*	P/N ____ (H)	2 Angle arm/intermediate bracket*	P/N ____ (H)
1 Pull rod**	P/N ____ (J)	2 Pull rods**	P/N ____ (J)
1 Stainless steel lifting cable	P/N ____ (K)	2 Stainless steel lifting cables	P/N ____ (K)

PREPACKAGED AND JOB READY SYSTEMS

INDOOR			
SIMPLEX		DUPLEX	
REQ.	REQ.	REQ.	REQ.
1 Grinder	P/N _____ (A)	2 Grinders	P/N _____ (A)
1 Simplex control panel	P/N _____ (B)	1 Duplex control panel	P/N _____ (B)
1 Variable level fl. sw. assm.	P/N _____ (C)	1 Variable level fl. sw. assm.	P/N _____ (C)
1 Basin, cover and hardware	P/N _____ (F)	1 Basin, cover and hardware	P/N _____ (F)
OUTDOOR			
SIMPLEX		DUPLEX	
REQ.	REQ.	REQ.	REQ.
1 Grinder	P/N _____ (A)	2 Grinders	P/N _____ (A)
1 Simplex control panel	P/N _____ (B)	1 Duplex control panel	P/N _____ (B)
1 Variable level fl. sw. assm.	P/N _____ (C)	1 Variable level fl. sw. assm.	P/N _____ (C)
1 J-box	P/N _____ (E)	1 J-box	P/N _____ (E)
1 Basin, cover and hardware	P/N _____ (G)	1 Basin, cover and hardware	P/N _____ (G)